

Derev 55382

Work Order ID 48385

June 26, 2009 12:38:34 PM



Item ID: D3560-041

Accept



Setup Start



Revision ID: D

Stop



Item Name: Arm Weldment

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3560

Rev D

100

0.00



BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut blanks 16.750" long

110

0.00



HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

1- Mill as per Folio FA693 Rev: _____ & Dwg D3560 Rev: _____ 2-C'sink
0.196" hole on manual mill as per dwg D3560 13-Deburr per dwg D3560

120

0.00



QC2- Inspect parts off machine FAI/FAIB

QC

Memo

0.00

Quality Control

Work Order ID 48385

June 26, 2009 12:38:34 PM



Page 2

Item ID: D3560-041

Accept



Setup Start



Revision ID: D

Stop



Item Name: Arm Weldment

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

140

Large Fab

0.00



Large Fab

Memo

0.00

Large Fab

1-Weld assembly as per dwg D3560: STEP: 1- clean material (buff bracket and bottom of arm with blue pad) 2- set up bracket and arm on jig 3- preheat bracket and arm with torch 4- clean before welding with brush 5- set up machine to 135 amps 6- weld across

10.01.05

8
(see other w/o)
dd ore

150

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

27 S 10/01/11

XS

Work Order ID 48385

June 26, 2009 12:38:34 PM



Page 3

Item ID: D3560-041
Revision ID: D
Item Name: Arm Weldment

Accept



Setup Start



Stop



Start Date: 15/07/2009 Start Qty: 8.00



Required Date: 03/08/2009 Req'd Qty: 8.00



Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:
QC: Date: SPC (Y/N): Date:

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC9- Inspect visual per QSI004- Fusion Welds

0.00



QC

Memo

0.00

Quality Control

PD 10.01.07

②

170

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

BR 10-01-11

⑧

180

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

SAD 10-01-11

⑧

Work Order ID 48385

June 26, 2009 12:38:34 PM



Page 4

Item ID: D3560-041

Accept



Setup Start



Revision ID: D

Stop



Item Name: Arm Weldment

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

0.00



Small Fab

Small Fab

Memo

0.00

Small Fab

1-Press bushing in D3560 arm per dwg D3562

ES, 10/01/12 (8)

200

0.00



QC

QC5- Inspect part completeness to step on W/O

Memo

0.00

Quality Control

27 S 6/01/13

(+8)

Conto

210

0.00



Packaging

Identify as per dwg & Stock Location: WA

Memo

0.00

SAD 10-01-14

8

Packaging

Work Order ID 48385

June 26, 2009 12:38:34 PM



Page 5

Item ID: D3560-041

Accept



Setup Start



Revision ID: D

Stop



Item Name: Arm Weldment

Start Date: 15/07/2009 Start Qty: 8.00



Cust Item ID:

Required Date: 03/08/2009 Req'd Qty: 8.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/01/15 *[Signature]*
MF 10-1-15

Picklist Print

June 26, 2009 12:38:33 PM

Page 1

Work Order ID: 48385

Parent Item: D3560-041RevD

Parent Item Name: Arm Weldment




Comments:

Start Date: 15/07/2009

Required Date: 03/08/2009

Start Qty: 8.00

Required Qty: 8.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
✓ D2808RevB 		Manufactured	No			100	Each	0.0000	8.0000			
Bushing												
✓ M6061T6B0.500X05.00 0 		Purchased	No			140	f	0.0000	11.7474			
6061-T6 Bar .500 x 5.00												
✓ D3592-1RevB 		Manufactured	No			190	Each	0.0000	8.0000			
Plate												

B46738

EP 10/01/12

111408

* B46891 = 2
B47015 = 6

PL 10.01.05

Date: Monday, 08/06/2009 9:24:21 AM
 User: Julie Dawson

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : ARM
Job Number : 48385	
Estimate Number : 12578	
P.O. Number :	Part Number : D3560041
This Issue : 08/06/2009 S.O. No. :	Drawing Number : D3560 REV D
Prsht Rev. : NC	Project Number : N/A
First Issue : / / Type : MACHINED PARTS	Drawing Revision : D
Previous Run : 47863	Material :
Written By :	Due Date : 15/06/2009 Qty: 8 Um: Each
Checked & Approved By : <u>JUD 09-06-08</u>	
Comment :	
: Est Rev:A New Issue 07.05.24 EC	
: est rev B ECN 987 07.10.09 EC verified by: DD	
: Est Rev:C ECN1048 07-12-18 DD verified by: EC	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
----------------	------------------------------	----------------------

1.0	✓ M6061T6B0500X05000	6061-T6 Bar .500 x 5.00
-----	----------------------	-------------------------



Comment: Qty.: 1.4648 f(s)/Unit Total: 11.7180 f(s)
 6061-T6 Bar 0.50" x 5.00"
 Batch: 111 408

SL 09/06/09

2.0	BAND SAW	BAND SAW
-----	----------	----------



Comment: BAND SAW
 Cut blanks 16.750" long

SL 09/06/09

3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
-----	-------	--------------------------------



Comment: HAAS CNC VERTICAL MACHINING #1

1- Mill as per Folio FA693 Rev: 41 & Dwg D3560 Rev: D

2-C'sink 0.196" hole on manual mill as per dwg D3560

3-Deburr per dwg D3560

SL 09/06/09

4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SL 09/06/09

Date: Monday, 08/06/2009 9:24:21 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: ARM

Job Number: 48385

Part Number: D3560041

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0



QC8

SECOND CHECK



Comment: SECOND CHECK

09/06/09

6.0



D35921

Plate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 8.0000 Each(s)

PLATE

Batch: *346891=2 347015=6*

09.06.23 8

7.0



LARGE FAB 1

LARGE FABRICATION RESOURCE 1



Comment: LARGE FABRICATION RESOURCE 1

1-Weld assembly as per dwg D3560

STEP:

- 1- clean material (buff bracket and bottom of arm with blue pad) *th*
- 2- set up bracket and arm on jig *th*
- 3- preheat bracket and arm with torch *th*
- 4- clean before welding with brush *th*
- 5- set up machine to 135 amps *th*
- 6- weld across bottom and top ends *th*
- 7- reheat with torch (65 deg C) *th*
- 8- on one side weld from bottom to top half way *th*
- 9- same for other side (half way) *th*
- 10- from half way point weld the rest of the first side (ease off pedal near end) *th*
- 11- same for remaining side (ease off pedal near end) *th*

PTD

8.0



QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

5/10/09 18

9.0



QC9

VISUAL WELDING INSPECTION



Comment: VISUAL WELDING INSPECTION

10.07 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3560-041 CAR 10-001 PAR #: Fault Category: LGE FAB NCR: (Yes) No DQA: ll Date: 10-01-19
 Resolution: Re-work Disposition: Re-work QA: N/C Closed: ll Date: 10/02/11

NCR: <u>48385</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10-01-05	1.0	weld cracked in usual spot. (bottom left corner) R.C. Process	<u>ll</u> <u>10-01-05</u>	<u>Zip cut weld in spot of crack, cleaned and rewelded. Per QSI 004 1 part only.</u>	<u>ll</u> <u>10-01-05</u>	<u>S</u> <u>10/01/01</u>	<u>ll</u> <u>10-01-05</u>	<u>ll</u> <u>10-01-05</u>

NOTE: Date & initial all entries

Date: Monday, 08/06/2009 9:24:21 AM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: ARM

Job Number: 48385

Part Number: D3560041

Job Number:



Seq. #:

Machine Or Operation:

Description :

10.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

Bill 10-01-11 (8)

11.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

SAD 10-01-11

12.0

D2808

Bushing



Comment: Qty.: 1.0000 Each(s)/Unit Total : 8.0000 Each(s)

Spacer

batch:

B46738

EP 10/01/12

13.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Press bushing in D3560 arm per dwg D3562

EP 10/01/12 (8)

14.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

SAD 10/01/13 (48)

15.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: WA

SAD 10-01-13 (8)

16.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 48385
Description: Arm		Part Number: D3560-1
Inspection Dwg: D3560 Rev: D		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

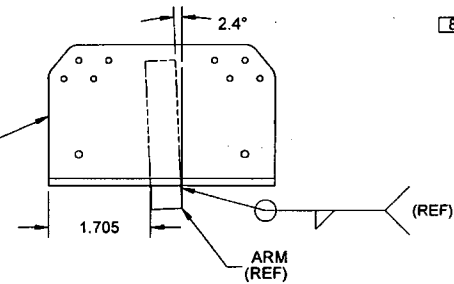
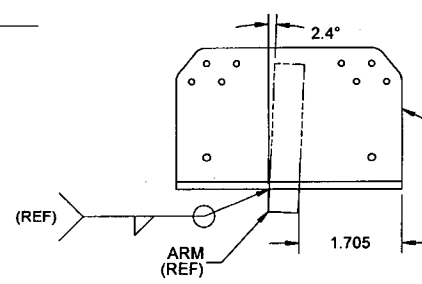
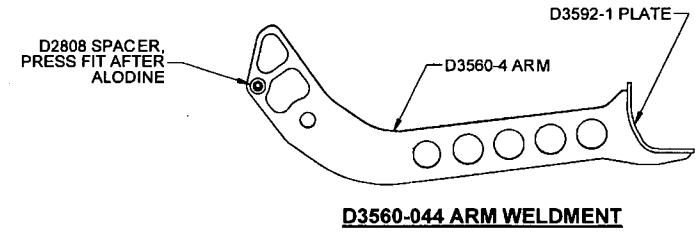
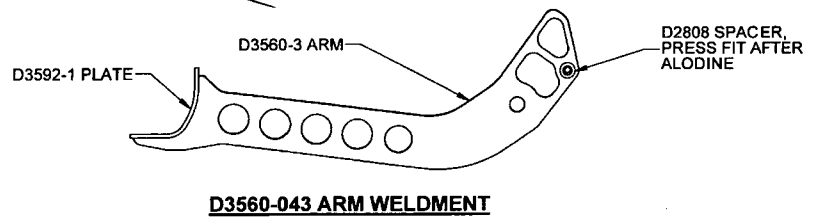
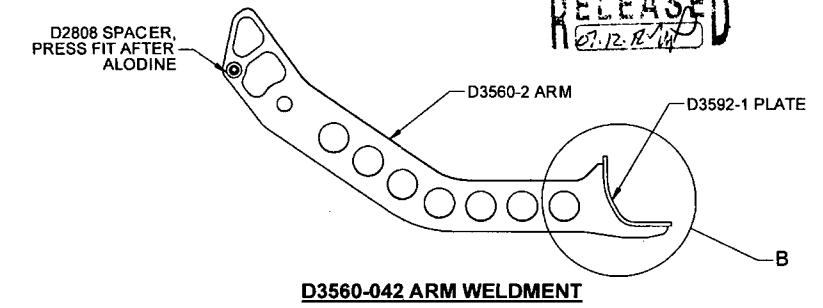
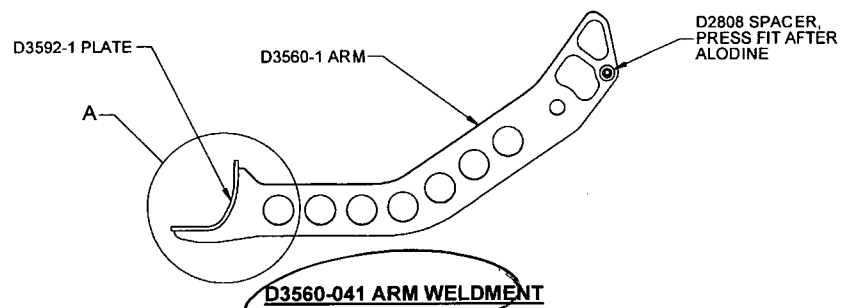
☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.507	+0.000/-0.001	.5065	✓			
Ø0.196	+0.005/-0.001	.196	✓			
Ø1.000	+0.010/-0.001	1.004	✓			
0.500	+/-0.010	.494	✓			
0.250	+/-0.010	.250	✓			
0.275	+/-0.010	.274	✓			
0.188	+/-0.010	.186	✓			
2.000	+/-0.010	2.000	✓			
1.700	+/-0.010	1.699	✓			
Ø0.385 x 100°	+/-0.010 x 0.5°	.380 x 100°	✓			
0.250 Deep	+/-0.010	.249	✓			

Measured by: J.L.	Audited by: B.S.	Prototype Approval:	N/A
Date: 09/06/09	Date: 09/06/09	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.01.17	New Issue P/O D3560-041	KJ/JLM	
B	07.06.13	Dimensions updated per Dwg Rev B	KJ/JLM	
C	08.07.24	Dwg Rev updated	KJ/DD	

RELEASED
01.12.2014



PARTS LIST

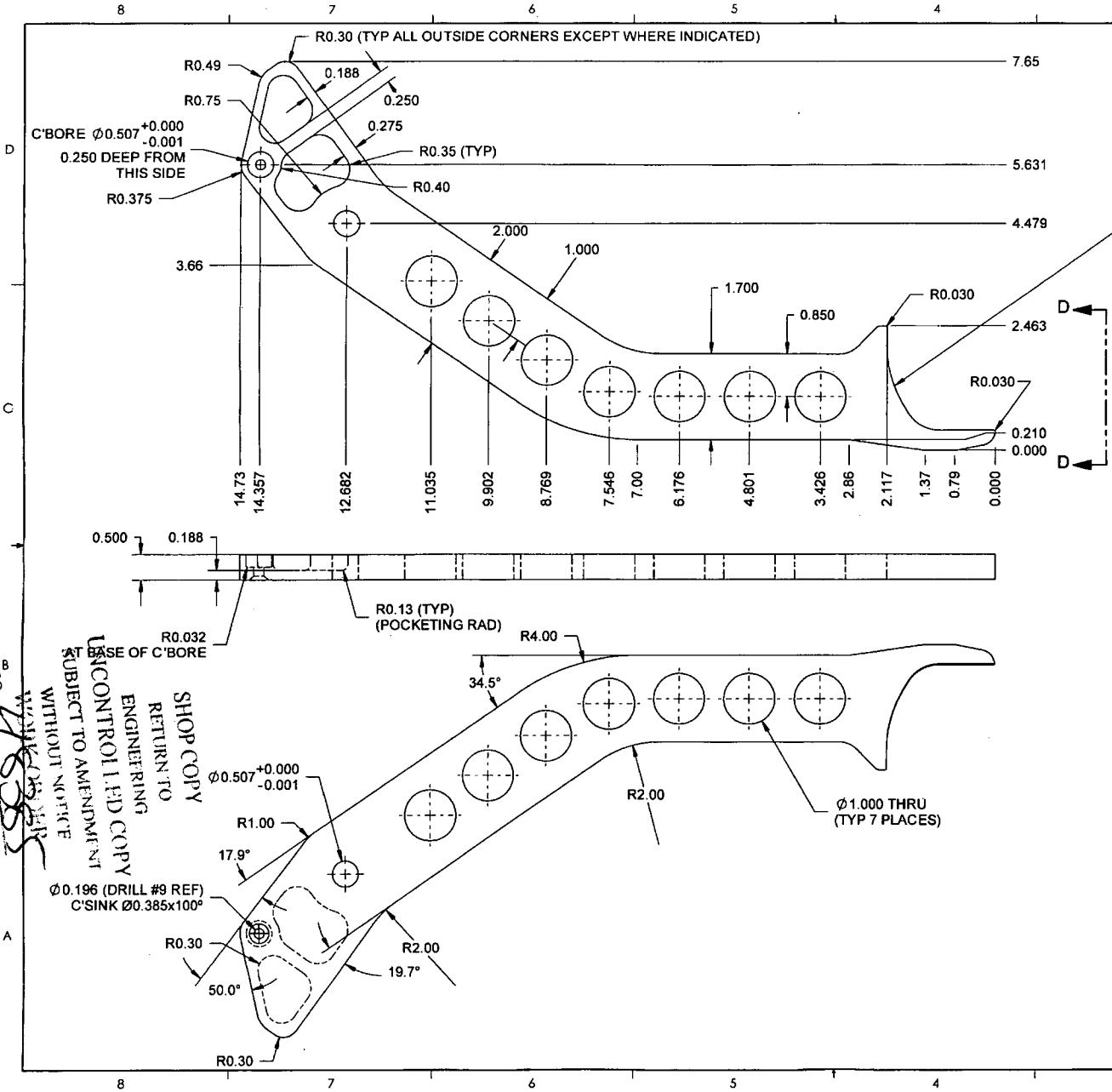
QTY -041	QTY -042	QTY -043	QTY -044	P/N	DESCRIPTION
X				D3560-041	ARM WELDMENT
	X			D3560-042	ARM WELDMENT
		X		D3560-043	ARM WELDMENT
			X	D3560-044	ARM WELDMENT
1	1	1	1	D2808	SPACER
1				D3560-1	ARM
	1			D3560-2	ARM
		1		D3560-3	ARM
			1	D3560-4	ARM
1	1	1	1	D3592-1	PLATE

DESIGN	ADD D2808 PRESS FIT NOTE: REDRAWN IN SOLIDWORKS	DC	07.11.16
DRAWN	REMOVE POWDER COAT	CP	07.06.19
CHECKED	REDESIGN AS WELDMENT, ADD POCKETS	CP	07.01.15
MFG. APPR.	NEW ISSUE	CP	06.09.25
APPROVED		BY	DATE
DE APPR.			
DATE	07.11.16		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D3560	REV. D
TITLE ARM WELDMENT	SCALE 1:4
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NOTES:
 1) MATERIAL: N/A
 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
 6) IDENTIFICATION: N/A
 7) WEIGHT: 1.23 lbs (TYP)
 8) WELDING: PER DART QSI 004

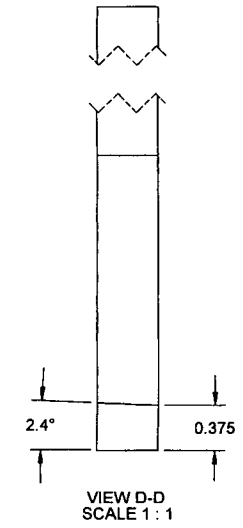
WORK ORDER NO. 10000
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 RETURN TO
 ENGINEERING
 SCALE 1:2
 SHOP COPY
 DETAIL A



RELEASED
07-12-11

D3560-2 ARM

- NOTES:
- 1) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T62) BAR, 0.500 THICK
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR
PER AMS-QQ-A-200/8 (OR AMS 4160)
(REF. DART SPEC. M6061T6B0.500)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 1.05 lbs



NO. 4555
WORK ON AIR
SUBJECT TO AMENDMENT
WITHOUT NOTICE
UNCONTROLLED COPY
ENGINEERING
RETURN TO
SHOP COPY
BASE OF C'BORE

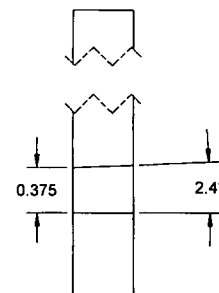
DESIGN	9	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	JC		
CHECKED	3	DRAWING NO. D3560	REV. D
MFG. APPR.	10	SHEET 3 OF 5	
APPROVED	AM	TITLE ARM WELDMENT	SCALE 1:2
DE APPR.	1	COPYRIGHT © 2008 BY DART AEROSPACE LTD	
DATE	07.11.16	THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

PROFILE TO MATCH
D3592-1 PLATE
MACHINE AT 2.4°
SEE VIEW E-E

D3560-3 ARM

NOTES:

- 1) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T62) BAR, 0.500 THICK
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR
PER AMS-QQ-A-200/8 (OR AMS 4160)
(REF. DART SPEC. M6061T6B0.500)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 1.05 lbs



VIEW E-E
SCALE 1:1

RELEASED
2012-11-14

DESIGN	g	DART AEROSPACE LTD	
DRAWN	sc	HAWKESBURY, ONTARIO, CANADA	
CHECKED	g	DRAWING NO.	REV. I
MFG. APPR.	g	D3560	SHEET 4 OF 5
APPROVED	MD	TITLE	SCALE
DE APPR.	g	ARM WELDMENT	1:2
DATE	07.11.16	COPYRIGHT © 2008 BY DART AEROSPACE LTD	
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R0.13 (TYP)
(POCKETING RAD)

0.188 0.500

R0.032
AT BASE OF C'BORE

1.702

CONSTANT TAPER
FROM 1.702 TO 1.750

1.750

R4.00

41.9°

Ø0.507^{+0.000}
-0.001

R1.00

17.9°

R2.00

19.7°

Ø0.196 (DRILL #9 REF)
C'SINK Ø0.385x100°

R0.30

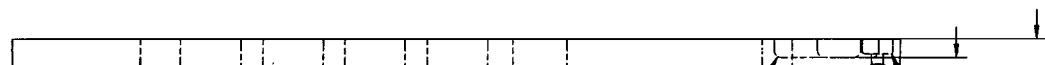
50.0°

R0.30

Ø1.000 THRU
(TYP 4 PLACES)

Ø0.900 THRU
(1 PLACE)

R2.00



0.188 (TYP)

0.250

0.275 (TYP)

R0.30 (TYP ALL OUTSIDE CORNERS EXCEPT WHERE INDICATED)

R0.49

0.375

0.000

C'BORE Ø0.507^{+0.000}
-0.001

0.250 DEEP FROM
THIS SIDE

0.000

R0.375

1.190

1.380

R0.75

3.314

3.62

1.000

6.635

6.92

2.19

7.332

8.028

8.725

8.88

9.421

10.27

8.174

7.93

8.92

6.989

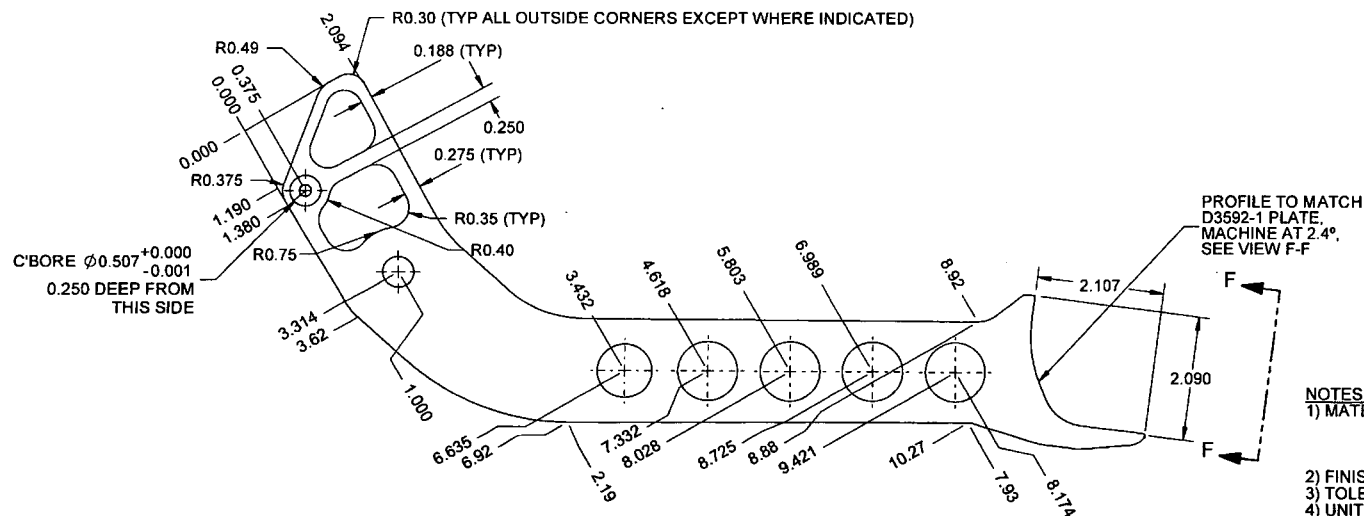
5.803

4.618

3.432

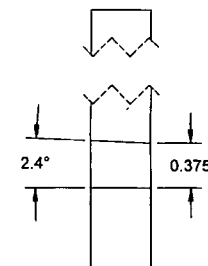
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE

WORK ORDER
NO. 48385



D3560-4 ARM

- NOTES:**
- 1) MATERIAL: 6061-T6 (OR 6061-T651/T6510/T6511/T62) BAR, 0.500 THICK
PER AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116) OR
PER AMS-QQ-A-200/8 (OR AMS 4160)
(REF. DART SPEC. M6061T6B0.500)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 1.05 lbs



VIEW F-F
SCALE 1:1

RELEASE
07-12-16

DESIGN		DART AEROSPACE LTD	
DRAWN	PC	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D3560	REV. D
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